

Complete Summary

GUIDELINE TITLE

Osteoporosis.

BIBLIOGRAPHIC SOURCE(S)

American Medical Directors Association (AMDA). Osteoporosis. Columbia (MD): American Medical Directors Association (AMDA); 2003. 24 p. [38 references]

GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version: American Medical Directors Association (AMDA). Osteoporosis. Columbia (MD): American Medical Directors Association (AMDA); 1998. 16 p.

COMPLETE SUMMARY CONTENT

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SCOPE

DISEASE/CONDITION(S)

- Osteoporosis
- Complications of osteoporosis

GUIDELINE CATEGORY

Diagnosis
Evaluation
Management
Prevention

Rehabilitation
Risk Assessment
Screening
Treatment

CLINICAL SPECIALTY

Family Practice
Geriatrics
Internal Medicine
Pharmacology
Physical Medicine and Rehabilitation
Preventive Medicine

INTENDED USERS

Advanced Practice Nurses
Allied Health Personnel
Dietitians
Health Care Providers
Nurses
Occupational Therapists
Pharmacists
Physical Therapists
Physician Assistants
Physicians
Social Workers
Speech-Language Pathologists

GUIDELINE OBJECTIVE(S)

- To improve the quality of care delivered to patients in long-term care settings
- To guide care decisions and to define roles and responsibilities of appropriate care staff

TARGET POPULATION

Elderly residents of long-term care facilities with or at risk of developing osteoporosis and/or complications of osteoporosis

INTERVENTIONS AND PRACTICES CONSIDERED

Diagnosis/Assessment

1. Screening for osteoporosis or evidence of its complications
 - Evaluation of admission or transfer information
 - Evaluation for presence of kyphosis, a history of fractures with minimal or no trauma, a loss of height associated with back pain, or a loss of height relative to the individual's height at age 30
2. Risk assessment for presence of non-modifiable and modifiable risk factors

3. Evaluation for secondary causes of osteoporosis (tests vary depending on suspected secondary cause)
4. Diagnostic evaluation
 - Evaluation of personal and family history
 - Evaluation of physical examination findings
 - Evaluation of laboratory values
 - Evaluation of bone mineral density (BMD) testing (dual-energy x-ray absorptiometry [DEXA] of the spine, hip, and forearm; other, more portable technologies to measure heel, finger, and forearm bone density; quantitative computed tomography [QCT]; central DEXA testing; ultrasonography and peripheral DEXA [pDEXA])
5. Evaluation of radiological reports of osteopenia
6. Evaluation of patient's function and osteoporosis-related disabilities.

Management/Treatment

1. Nonpharmacologic interventions:
 - Calcium and vitamin D supplementation
 - Exercise
 - Other lifestyle Interventions, such as smoking cessation; reduction or elimination of alcohol and caffeine
2. Measures to prevent falls or protect hips from fracture
3. Individualized pharmacologic interventions:
 - Bisphosphonates: alendronate (Fosamax) and risedronate (Actonel)
 - Calcitonin nasal spray (Miacalcin)
 - Raloxifene (selective estrogen receptor modulator) (Evista)
 - Teriparatide (parathyroid hormone) (Forteo)
 - Hormone replacement therapy (estrogen or estrogen/progesterone) (Various preparations)
 - Combination therapy
4. Treatment of symptoms related to skeletal deformity
 - Treatment of chronic pain caused by osteoporosis or complications with local modalities, analgesics, calcitonin
 - Treatment of acute back pain caused by osteoporotic vertebral compression fracture with bed rest, program of mobilization and exercise to retain or improve muscle strength and mobility, narcotic analgesics; cathartics to minimize constipation; wheelchair, wheeled walker, or cane to reduce weight bearing
 - Application of ice packs early after a fracture, followed by mild superficial heat and gentle range-of-motion and relaxation exercises to reduce pain and contraction in adjacent muscle groups; corsets or other immobilization devices to minimize pain
 - A kypho-orthosis with weights fitted below the inferior angle of the scapula, used in conjunction with posture training
 - Vertebroplasty and kyphoplasty as palliative treatment of patients with severe persistent pain
5. Measures to improve function and prevent serious complications, particularly measures to prevent falls or reduce the frequency of falling and the severity of injuries from falling may include
6. Rehabilitative and restorative interventions, such as weight-bearing and muscle-strengthening exercises

7. Periodic assessment, monitoring, and documentation of patient's progress (objective pain scales, measures of function and dependency in activities of daily living, indicators of strength and mobility, BMD measurement, serum and urine biochemical markers of bone turnover)
8. Monitoring of post-operative patient for perioperative complications such as thromboembolism, immobility, and deconditioning, delirium, pressure sores, malnutrition, eating problems, and depression
9. Monitoring for side effects of osteoporosis treatments

MAJOR OUTCOMES CONSIDERED

- Effectiveness of interventions at improving bone density
- Preventing bone loss
- Improving function
- Decreasing pain
- Preventing or reducing the risk of serious complications, such as fractures

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

Not stated

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Expert Consensus

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

The guideline was developed by an interdisciplinary work group using a process that combined evidence- and consensus-based thinking. The groups were composed of practitioners involved in patient care in the institutional setting. Using pertinent articles and information and a draft outline, the group worked to make a simple, user-friendly guideline that focused on application in the long-term care institutional setting.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

External Peer Review
Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

All American Medical Directors Association (AMDA) clinical practice guidelines undergo external review. The draft guideline is sent to approximately 175+ reviewers. These reviewers include AMDA physician members and independent physicians, specialists, and organizations that are knowledgeable of the guideline topic and the long-term care setting.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

The algorithm [Osteoporosis](#) is to be used in conjunction with the clinical practice guideline. The numbers next to the different components of the algorithm correspond with the steps in the text. Refer to the "Guideline Availability" field for information on obtaining the full text guideline.

CLINICAL ALGORITHM(S)

An algorithm is provided for [Osteoporosis](#).

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The guideline was developed by an interdisciplinary work group using a process that combined evidence- and consensus-based thinking.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

- This guideline is intended to help members of the interdisciplinary team in long-term care facilities to recognize, assess, treat, and monitor patients with osteoporosis and complications of osteoporosis.
- Appropriate management may help patients in long-term care facilities improve bone density, prevent bone loss, improve function, decrease pain, and prevent or reduce the risk of serious complications, such as fractures.

POTENTIAL HARMS

Medication side effects:

- Calcium supplements may cause constipation and other gastrointestinal complaints.
- Calcitonin may cause nasal irritation.
- Alendronate or risedronate may cause increased heartburn, esophageal irritation, musculoskeletal pain, and other symptoms
- Raloxifene may cause hot flashes, increased risk of venous thromboembolism
- Hormone replacement therapy may cause breast tenderness or vaginal bleeding, and increased risk of venous thromboembolism in immobile patients, increased risk of invasive breast cancer, and increased risk of myocardial infarction and stroke.
- A kypho-orthosis with weights may cause sores from trauma to frail skin.

CONTRAINDICATIONS

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Alendronate precautions:

- Active gastritis, duodenitis, or ulcer
- Creatinine clearance <35 cc/min/ 1.73m^2
- Esophageal stricture or motility dysfunction
- Hypocalcemia
- Poor pill-swallowing ability

Risedronate contraindications:

- Creatinine clearance $<30\text{ml/min}/1.73\text{m}^2$

- Hypersensitivity to any product component
- Hypocalcemia
- Inability to sit or stand upright for 30 minutes

Calcitonin contraindications:

- Hypersensitivity to any product component

Calcitonin precautions:

- Sinus problems

Raloxifene contraindications:

- Patients with history of deep vein thrombosis or pulmonary embolism

Teriparatide contraindications:

- Paget's disease
- Hyperparathyroidism
- Bone cancer or radiation to bone
- Vitamin D deficiency
- Multiple kidney stones
- Recent diagnosis of breast or prostate cancer

Hormone replacement therapy contraindications:

- Patients with history of deep vein thrombosis or pulmonary embolism

QUALIFYING STATEMENTS

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- This clinical practice guideline is provided for discussion and educational purposes only and should not be used or in any way relied upon without consultation with and supervision of a qualified physician based on the case history and medical condition of a particular patient. The American Medical Directors Association and the American Health Care Association, their heirs, executors, administrators, successors, and assigns hereby disclaim any and all liability for damages of whatever kind resulting from the use, negligent or otherwise, of this clinical practice guideline.
- The utilization of the American Medical Director Association's Clinical Practice Guideline does not preclude compliance with State and Federal regulation as well as facility policies and procedures. They are not substitutes for the experience and judgment of clinicians and care-givers. The Clinical Practice Guidelines are not to be considered as standards of care but are developed to enhance the clinician's ability to practice.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

The implementation of this clinical practice guideline (CPG) is outlined in four phases. Each phase presents a series of steps, which should be carried out in the process of implementing the practices presented in this guideline. Each phase is summarized below.

- I. **Recognition**
 - Define the area of improvement and determine if there is a CPG available for the defined area. Then evaluate the pertinence and feasibility of implementing the CPG.
- II. **Assessment**
 - Define the functions necessary for implementation and then educate and train staff. Assess and document performance and outcome indicators and then develop a system to measure outcomes.
- III. **Implementation**
 - Identify and document how each step of the CPG will be carried out and develop an implementation timetable.
 - Identify individual responsible for each step of the CPG.
 - Identify support systems that impact the direct care.
 - Educate and train appropriate individuals in specific CPG implementation and then implement the CPG.
- IV. **Monitoring**
 - Evaluate performance based on relevant indicators and identify areas for improvement.
 - Evaluate the predefined performance measures and obtain and provide feedback.

The identification of quality indicators related to osteoporosis risks, complications, treatment, and prevention may assist facilities in monitoring not only the care of individual patients with osteoporosis but also their overall performance in the care of patients with osteoporosis. Examples of such indicators include:

- Analgesic use
- Balance and gait
- Falls and fall-related complications (fractures, hospitalizations, etc.)
- Functional ability
- Independence
- Number of patients receiving bisphosphonates
- Number of patients receiving calcium and vitamin D supplementation
- Pain

IMPLEMENTATION TOOLS

Clinical Algorithm
Tool Kits

For information about [availability](#), see the "Availability of Companion Documents" and "Patient Resources" fields below.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better
Living with Illness
Staying Healthy

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

American Medical Directors Association (AMDA). Osteoporosis. Columbia (MD):
American Medical Directors Association (AMDA); 2003. 24 p. [38 references]

ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2003

GUIDELINE DEVELOPER(S)

American Medical Directors Association - Professional Association

SOURCE(S) OF FUNDING

American Medical Directors Association

GUIDELINE COMMITTEE

Steering Committee

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

Not stated

FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

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GUIDELINE AVAILABILITY

Electronic copies: None available

Print copies: Available from the American Medical Directors Association, 10480 Little Patuxent Pkwy, Suite 760, Columbia, MD 21044. Telephone: (800) 876-2632 or (410) 740-9743; Fax (410) 740-4572. Web site: www.amda.com.

AVAILABILITY OF COMPANION DOCUMENTS

The following are available:

- Guideline implementation: clinical practice guidelines. Columbia, MD: American Medical Directors Association, 1998, 28 p.
- We care: implementing clinical practice guidelines tool kit. Columbia, MD: American Medical Directors Association, 2003.

Electronic copies: None available

Print copies: Available from the American Medical Directors Association, 10480 Little Patuxent Pkwy, Suite 760, Columbia, MD 21044. Telephone: (800) 876-2632 or (410) 740-9743; Fax (410) 740-4572. Web site: www.amda.com.

PATIENT RESOURCES

None available

NGC STATUS

This NGC summary was completed by ECRI on July 6, 2004. The information was verified by the guideline developer on August 4, 2004.

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Date Modified: 10/6/2008

